

REMARKS

Claims 1-3, 5-21, 23-28, 30-42, 44-74, 76-85 and 87-123 are pending in the present application and all were rejected in the April 3, 2009 Office Action. No amendments are being made herein. Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections based on the following remarks.

Office Action dated April 3, 2009

Claims 1-3, 5-21, 23-28, 30-42, 44-74, 76-85 and 87-123 have been rejected under 35 USC § 103(a) as allegedly obvious over Heaney (U.S. Patent No. 4,477,129) in view of Misonou et al. (U.S. Patent No. 6,830,791). Claims 18 and 39 have been rejected under 35 USC § 103(a) as allegedly obvious over Heaney and Misonou, in further view of Richardson (U.S. Patent No. 5,113,628).

The Examiner relies on Heaney and Misonou, as in previous Office Actions, for disclosure of a refrigerator door structure and a glass panel system having an emissivity coating, respectively. The Examiner relies on Richardson for disclosure of a clear panel having a frame made of plastic. With respect to Applicant's prior arguments regarding U values, the Examiner has responded that the disclosed U values are inherent, measureable features. In response, Applicant has submitted herewith evidence, in the form of a declaration by the inventor under 37 C.F.R. § 1.132, establishing that: (a) the discovery that the claimed U values of approximately 0.2 BTU/hr-ft²-F or less (and emissivity values of 0.05 or less) are required for the refrigeration door to prevent condensation, without the need for the application of energy, on the outside of the glass under the performance requirements of U.S industry standards was a surprising and unexpected result, as it was previously unknown and unexplored in the industry that the specific type of structure claimed could be used to eliminate the need for electric heat; and (b) this is not disclosed or suggested in any way by Heaney (USP 4,477,129), Misonou (USP 6,830,791), Richardson (USP 5,113,628) or any other prior art reference that Applicant is aware of, and was not within the knowledge of those skilled in this art as of the time of the claimed invention, as of the time of the filing of the subject application or at anytime prior to the publication of the subject application.

Rejection of Claims 1-3, 5-21, 23-28, 30-42, 44-74, 76-85 and 87-123 Under 35 U.S.C. § 103(a)

Claims 1-3, 5-21, 23-28, 30-42, 44-74, 76-85 and 87-123 stand rejected under 35 USC § 103(a) as allegedly obvious over Heaney in view of Misonou. The Examiner's full rationale is set forth on pages 3-12 of the April 3, 2009, Office Action. With respect to the independent claims, i.e. claims 1, 26, 47, 61, 71, 90, 104, and 117, the Examiner has asserted that Heaney discloses a door having inner, outer and middle sheets of glass, first and second sealants, a frame, and a coating. The Examiner acknowledges, and Applicant agrees, that Heaney does not disclose the use of a glass panel system with an emissivity coating. However, the Examiner impermissibly relies upon Misonou as disclosing this limitation.

The combination of the aforementioned cited documents would, in no way, lead one of skill in the art to arrive at the claimed subject matter, and only if one of skill in the art is equipped with the disclosure of the present application, would one of skill in the art be able to arrive at the claimed subject matter. *See Declaration of Christopher R. Cording* at ¶ 9. More specifically, the present application discloses, at pages 8 and 9, that it was the discovery, and the subsequent testing and computer modeling of the present invention, that showed that U values of approximately 0.2 BTU/hr-ft²-F or less (and emissivity values of 0.05 or less) are required for the refrigeration door to prevent condensation, without the need for the application of energy, on the outside of the glass under the performance requirements of U.S industry standards. *Id.* This is not disclosed or suggested in any way by Heaney, Misonou, or Richardson and was not within the knowledge of those skilled in the art at the time of the invention. *Id.* The prior art simply does not disclose the present invention.

For instance, Claim 1 recites "an insulating glass unit having a U value substantially equal to or less than 0.2 BTU/hr-sq ft-F substantially preventing the formation of condensation . . . without the application of electricity." The Examiner has stated that when "the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Office Action at Page 4. However, neither Heaney nor Misonou disclose the use of low emissivity coatings to achieve U values enabling a refrigeration door to prevent condensation without the need for application of energy. The prior art certainly does not teach or suggest specific values or ranges of insulating or heat conductivity

properties that may prevent condensation on a refrigerator door. As noted above, it was the discovery, and the subsequent testing and computer modeling of the present invention, that showed that U values of approximately 0.2 BTU/hr-ft²-F or less are required for a refrigeration door to prevent condensation without the need for the application of energy. *See Declaration of Christopher R. Cording* at ¶ 9. This recitation of claim 1 does not disclose mere optimization of subject matter disclosed by the prior art. These U values are critical to the performance of the present invention. *Id.* at ¶ 8.

Claim 1 further recites the use of “a first low emissivity coating adjacent the second surface of said inner sheet of glass” and “a second low emissivity coating adjacent the second surface of said outer sheet of glass.” While the Examiner correctly notes that Heaney does not disclose two emissivity coatings, as recited in claim 1, Misonou does not supplement this teaching. Misonou is focused on the use of a single low-emittance film, and the optimum placement of a single film in the panel structure. *See, e.g.*, col. 4, lines 53-64. In determining where to place the single film, Misonou notes that the effect of a low-emittance film layer is greater with a vacuum layer than an air layer, and thus the low-emittance film should be formed on the glass sheet contacting a vacuum layer. *See* col. 5, lines 4-11. Figures 4-7 illustrate infrared reflection from a single surface dependent upon which surface the low-emittance film is deposited. Misonou does not disclose a low emissivity coating on the inner surface of two sheets of glass as recited in claim 1. The use of multiple sheets of glass having emissivity coatings is not disclosed by either Heaney or Misonou, and was not mere duplication of parts as asserted by the Examiner. Specifically, the use of multiple coatings enables the IGU to have a total emissivity necessary to produce the new and unexpected results of the present invention. *See Declaration of Christopher R. Cording* at ¶ 8.

For at least these reasons, neither Heaney nor Misonou, alone or in combination, teach or suggest each and every limitation of claim 1. Therefore, Applicant respectfully submits that the rejection of claim 1 should be withdrawn.

Claim 26 stands rejected under 35 USC § 103(a) as allegedly obvious over Heaney in view of Misonou. The Examiner again relies upon the teachings of Misonou to supplement Heaney. However, neither Heaney nor Misonou, alone or in combination, teach or suggest each

and every element of claim 26. For instance, neither Heaney nor Misonou, teach or suggest a refrigerator door comprising a glass unit having two low emissivity coatings, wherein the glass unit has “an emissivity substantially equal to or less than 0.04 substantially preventing the formation of condensation . . . without the application of electricity” as recited in claim 26. Misonou discloses generally that low-emittance films may be used to yield glass sheets having a reflectance of approximately 0.20-0.05. *See* col. 6, line 44 – col. 7, line 3. However, Misonou does not disclose an IGU having a total emissivity of approximately equal to or less than 0.04, or an operable range of emissivities that would enable the IGU of the present invention to prevent condensation without the application of electricity. As detailed in the Cording Declaration, the emissivity values of the present invention are critical and yield unexpected results. *See Declaration of Christopher R. Cording at ¶¶ 8-9.* Therefore, Applicant respectfully submits that the rejection of claim 26 should be withdrawn.

For at least the reasons discussed above with respect to claims 1 and 26, Applicant further requests that the rejections of claims 47, 61, 71, 90, 104 and 117 be withdrawn as well.

Claims 2, 3, 5-17, 19-21, 23-25, 27, 28, 30-38, 40-42, 44-46, 48-60, 62-70, 72-74, 76-85, 87-89, 91-103, 105-116 and 118-123 also stand rejected under 35 USC § 103(a) as being allegedly obvious over Heaney in view of Misonou. These claims depend, directly or indirectly, on independent claims 1, 26, 47, 61, 71, 90, 104 and 117. Therefore, for at least the reasons discussed above with respect to the independent claims, Applicant respectfully submits that the rejections of claims 2, 3, 5-17, 19-21, 23-25, 27, 28, 30-38, 40-42, 44-46, 48-60, 62-70, 72-74, 76-85, 87-89, 91-103, 105-116 and 118-123 should be withdrawn as well.

Rejection of Claims 18 and 39 Under 35 U.S.C. § 103(a)

Claims 18 and 39 stand rejected under 35 USC § 103(a) as allegedly obvious over Heaney and Misonou, in further view of Richardson. Claims 18 and 39 depend indirectly on independent claims 1 and 26, respectively. Therefore, for at least the reasons discussed above with respect to claims 1 and 26, Applicant respectfully submits that the rejections of claims 18 and 39 should be withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections, and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

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